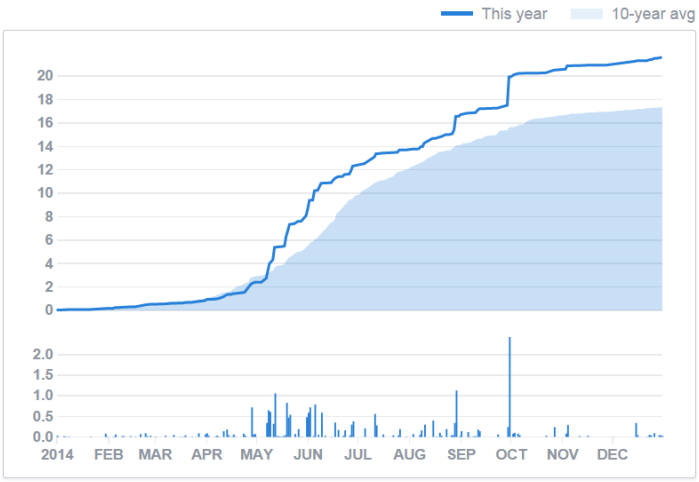
Nebraska On-Farm Research Network

Harvest Methods in Dry Edible Beans

Study ID: 015013201401
County: Box Butte
Soil Type: Creighton & Alliance- Sandy Loam
Planting Date: 6/18/2014
Harvest Date: 10/16/2014
Population: 109,423
Row Spacing: Drilled 7.5”
Reps: 4
Previous Crop: Corn
Tillage: Minimum Till
Herbicides: Pre: Outlook – label rate **Post:** Raptor/Result - label rate
Insecticides/Fungicides:
Fertilizer: Standard bean fertilization for 80 bu yield
Irrigation: Irrigated – amounts unknown.

Rainfall:



Introduction: The purpose of this study was to compare 4 different Great Northern bean varieties in a direct harvest bean production system looking at both yield and harvest loss. Traditionally dry beans are harvested in a three step process starting with undercutting with a blade or rod, then windrowing, and finally combining. In recent years the undercutting and windrowing were combined as one process and then the combine would come through as the second process. This two-step process is the most common process at present. Yield loss in the three step method or two step method in ideal conditions can be 1.5 bu/ac. Harvest loss can be much higher with these methods when wind blows the cut beans or untimely weather events occur. Direct harvest is simply one pass through the field with the combine, leaving the beans safer from weather events up until the time of combining (Figure 1). A good upright bean variety, proper level field conditions and a combine header suitable for direct harvest are essential to minimize harvest loss and economically justify direct harvest. The beans in this study were harvested in the late morning. Harvesting in cooler or more humid conditions can reduce harvest loss.

Figure 1: Direct Harvest with draper head.

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Results:

	Yield† (bu/ac)	Yield Loss (bu/ac)	White Mold Rating	Stand Count	Net Return ‡
Great Northern A	23.9 A*	6.7 A	7.50 A	101,059 A	$429.30
Great Northern B	20.1 AB	3.7 B	5.75 B	106,286 A	$360.80
Great Northern C	19.4 B	7.0 A	6.25 B	108,029 A	$348.30
Great Northern D	19.2 B	3.6 B	7.875 A	122,317 A	$344.70
P-Value	*0.0669*	*0.0121*	*0.0006*	*0.3462*	--

†Bushels per acre not corrected to dry moisture. Moisture was very close to the 14% standard.

*Values with the same letter are not significantly different at a 90% confidence level.

‡Net return based on $30/cwt ($18/bu @ 60lb/bu)

Figure 2: White mold in beans.

Summary: Due to a serious outbreak of white mold (Figure 2) in September these varieties and the surrounding field were grown at an economic loss. Beans selling around $28/cwt would have to yield about 35 bu/ac to break even. Variety A yielded better than the rest and there were differences in harvest loss and white mold ratings giving some insight into variety disease resistance. The quality of the beans harvested was good as the damaged beans went out the back of the combine.

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